

REMARKS

The present Amendment is in response to the Examiner's Office Action mailed December 13, 2006. Claim 4 is cancelled and claims 1 and 14 are amended. Claims 1-3, 5-7, and 14-18 are now pending in view of the above amendments.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicants request that the Examiner carefully review any references discussed below to ensure that Applicants' understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

I. Examiner's Interview

Applicant's express their appreciation to the Examiner for conducting a telephone interview with Applicants on April 11, 2007 and April 13, 2007, in which proposed amendments to claims 1 and 14 were discussed and agreed upon.

II. Rejection Under 35 U.S.C. § 112

The Examiner rejects claim 1 under 35 U.S.C. § 112, for lack of written description for the term "non-aluminum." Claim 1 has been amended to remove the term "non-aluminum." Therefore, Applicant's respectfully request the rejection under § 112 be withdrawn.

III. PRIOR ART REJECTIONS

A. Rejection Under 35 U.S.C. § 102(b)

The Examiner rejects claims 1, 2, and 5 under 35 U.S.C. § 102(b) as being anticipated by (United States Patent No. 5,719,891). Applicants have amended claim 1 to recite (i) an "active

region comprising In and being configured to emit light at a long wavelength in a range from about 1200 nm to about 1800 nm”; (ii) “comprising In and having at least about 25 mirror pairs”; (iii) “the dielectric layer having a configuration and a composition compatible with growing the dielectric layer using a masking technique”; and (iv) a dielectric material “selected from the group consisting of SiO₂, TiO₂, SiN, and combinations thereof.

Support for amendment (i) can be found in the Application at p.8, lines 14–15; for amendment (ii) at p. 4, lines 2–4 (explaining that in InP based VCSELs, at least 25 mirror pairs can be necessary); for amendment (iii) at p. 15, lines 2–6; and for amendment (iv) at p. 14, lines 15–16.

Jewel does not teach a long wavelength device with at least 25 mirror pairs and a confining layer of SiO₂, TiO₂, or SiN. Furthermore, *Jewel* teaches forming a confining region using lateral oxidation of Al, not a masking technique using SiO₂, TiO₂, or SiN. (See *Jewel* col. 1, lines 23–26 and col. 9 lines 8–9). Consequently, claim 1 as amended is believed to be allowable over the art of record.

Claims 3, 4, 6, 7, and 14–18 have been rejected as being unpatentable over *Jewell* in view of *Nurmikko*. Claim 14 has been amended to require (i) “active means configured to emit light at a long wavelength in a range from about 1200 nm to about 1800 nm”; (ii) “the confinement means having a configuration and composition compatible with growing the confinement means using a masking technique”; and (iii) “the second reflecting means comprising a plurality of layers comprised of InP, InAlAs, or AlAsSb.

Support for amendment (i) can be found in the Application at p.8, lines 14–15; for amendment (ii) at p. 15, lines 2–6; and for amendment (iii) at p. 9, lines 3–7.

There is no motivation to use the SiO₂ or SiN taught in *Nurmikko* to make the gain guide in *Jewel* because *Jewel* teaches making the gain guide by a lateral oxidation process in which aluminum is oxidized using steam. (See *Jewel* col. 1, lines 23–26 and col. 9 lines 8–9). The materials SiO₂ and SiN are not compatible with making a gain guide using lateral oxidation. To make it clear that claim 14 is directed to materials that are not laterally oxidized, claim 14 has been amended to require “the confinement means having a configurations and composition compatible with growing the confinement means using a masking technique.” Or in other words, not lateral oxidation. The aluminum deposited to make the gain guide in *Jewel* is not a compatible material for making a gain guide using masking since aluminum is not a dielectric

until it has been laterally oxidized using steam (*i.e.*, the Al must be converted to Al_2O_3 by steam). Consequently one of skill in the art would not combine the materials of *Niurmikko* with *Jewel*. Therefore, applicants respectfully request that the rejection under 35 U.S.C. § 102(b) be withdrawn.

Each of claims 2-3, 5-7, and 15-18 depend from either claim 1 or claim 14. Therefore, for at least the same reasons given above with respect to claims 1 and 14, dependent claims 2-3, 5-7, and 15-18 are allowable. Claim 4 has been cancelled in light of the amendment to claim 1.

CONCLUSION

In view of the foregoing, and consistent with the tentative agreement reached during the Examiner Interview, Applicants believe the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 13 day of April, 2007.

Respectfully submitted,



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